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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,484	11/19/2003	Tetsuo Yamada	107317-00062	9174
4372	7590	04/06/2005	EXAMINER	
ARENT FOX KINTNER PLOTKIN & KAHN 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			KO, TONY	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,484

Applicant(s)

YAMADA, TETSUO

Examiner

Tony Ko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-15 is/are rejected.
- 7) ☒ Claim(s) 2,3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/19/03</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 4-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Oda (JP 2000-125209).

3. Regarding claim 1, Oda discloses (Figs. 1 and 10) a solid state image pickup device, comprising: a semiconductor substrate; a plurality of pixels formed on said semiconductor substrate, each pixel having a plurality of photoelectric conversion elements (SH, SL), electrically separated; and a light shielding film (14b) formed over said semiconductor substrate, said light shielding film having an opening (AL) above each pixel, wherein at least said first photoelectric conversion element and said second photoelectric conversion element have different saturated exposure amounts (Col. 2, Lines 51-53, corresponds to the U.S application 6,831,692)

4. Regarding claim 4, Oda discloses (Fig. 10) the image pickup device wherein at least a half of a plan area of said second photoelectric conversion is covered with said light shielding film.

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5. Regarding claim 5, Oda discloses the image pickup device further comprising color filter formed above said semiconductor substrate, each of the color filters covering an upper area of said opening of one pixel (Col. 10, Lines 65-67).

6. Regarding claim 6, Oda discloses the image pickup device further comprising micro lenses formed above said semiconductor substrate, each of the micro lenses (16) covering an upper area of said opening of one pixel.

7. Regarding claim 7, Oda discloses (Fig. 10A and 10B) the image pickup device further comprising: charge reading device disposed near at each pixel; a first transfer control electrode for transferring electric charges accumulated in said first photoelectric conversion element to said charge reading device; a second transfer control electrode (14j, 10B) electrically separated from said first transfer control electrode, for transferring electric charges accumulated in said second photoelectric conversion element to said charge reading device.

8. Regarding claims 8 and 9, Oda discloses (Fig. 1) a combined shape of said first photoelectric conversion element and said second photoelectric conversion element is a rhomboid shape or truncated rhomboid shape, said first transfer control electrode is disposed along one side of the rhomboid shape, and said second transfer control electrode is disposed along another side of the rhomboid shape. Oda also discloses the first photoelectric conversion element is disposed in a central area of the pixel and along one side of the rhomboid, and said second photoelectric conversion element is disposed at least along another side.

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9. Regarding claim 10, Oda discloses the image pickup device wherein said plurality of pixels are disposed two-dimensionally in horizontal and vertical directions, and horizontal positions of pixels disposed along adjacent horizontal lines are shifted.

10. Regarding claim 12, as understood from the claim, Oda discloses a solid state image pickup device with plurality of pixels are put in a light shielding state when said first signal read period starts. Examiner understands that light shielding is achieved by implementing a shield, and the shield will remain in effect despite the operation of the device.

11. Regarding claim 14, Oda discloses the first and second image signals are synthesized, component of an image signal with a relatively small saturated exposure amount above a predetermined level is cut off (142) to make a maximum output.

12. Regarding claims 11, 13 and 15, Oda discloses the a driving method for solid state image pickup device, comprising: a semiconductor substrate; a plurality of pixels formed on said semiconductor substrate, each pixel having a plurality of photoelectric conversion elements inclusive of a first photoelectric conversion element and a second photoelectric conversion element electrically separated; and a light shielding (14b) film formed over said semiconductor substrate, said light shielding film having an opening above each pixel, wherein at least said first photoelectric conversion element and said second photoelectric conversion element have different saturated exposure amounts, the driving method comprising the steps of: reading a first signal charge from said first photoelectric conversion element during a first signal read period; and reading a second signal charge from said second photoelectric conversion element during a second

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signal read period following the first signal read period. Oda also discloses the image pickup device further comprising the step of synthesizing (14f) an image signal from a first image signal generated from said first signal charge and a second image signal generated from said second signal charge.

Allowable Subject Matter

13. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: Prior art does not disclose a saturated output voltage at a maximum accumulated charge amount is V_{sat1} , a sensitivity of said first photoelectric conversion element is $R1$, a saturated output voltage of said second photodiode is V_{sat2} , a sensitivity of said second photoelectric conversion element is $R2$ and $V_{sat1}/V_{sat2} = x$ and $R1/R2 = Y$, a ratio $(y+1)/(x+2)$ is large than 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Ko whose telephone number is 571-272-1926. The examiner can normally be reached on Monday-Friday 7:30 - 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TKO



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